

Flight Scientist Report
Tuesday 01/18/2022 ACTIVATE RF105

Flight Type: Statistical Survey Flight

Flight Route: JAMIE RADDZ ZIZZI FISSH AGUNE 3706N06945W ZIBUT ATLIC

Special Notes: Excellent Cold Air Outbreak day and this is first of 2 flights doing essentially the same flight pattern as last Tuesday in the morning flight (RF 100 on Jan 11) where we get upwind of cloud field and go with the MBL winds.

King Air

Pilot report (Jamison):

Morning cooperative flight with HU-25. Route of flight: KLFJ-JAMIE-RADDZ-ZIZZI-FISSH-AGUNE-37.10N069.75W-ZIBUT-ATLIC-TURET-KLFJ. Weather clear with winds out of the west for KLFJ 26 departure; B200 took off first based on upper wind profile. Uneventful climb with no undue delays from departure control; continued uninterrupted climb on course to FL270. Positioning with HU-25 was maintained within 10 minutes through duration of science collection until approx. 40nm east of ATLIC on final leg of flight. Conditions at altitude were smooth air and exceptionally clear visibility at altitude all the way down to cloud tops (~8K ft MSL). Upper level winds slightly stronger than forecast, varying between 85-105 kts from the WNW throughout flight. 8x dropsondes deployed; ZIZZI, mid-point between ZIZZI and AGUNE, 2x dropsondes at AGUNE due to loss of GPS signal on 1st drop, mid-point between AGUNE and turnpoint, turnpoint, ZIBUT, and ATLIC prior to descent. Maintained FL280 until final dropsonde release at ATLIC then commenced 2000 fpm descent for recovery. ATC directed a left 360 degree turn and level off at FL230 for sequencing between ATLIC and TURET; upon completion, commenced uneventful straight-in approach to r/w 26.

Flight scientist report (Shingler):

KLFJ JAMIE RADDZ ZIZZI AGUNE 3706N06945W ZIBUT ATLIC KLFJ

Ran a long leg along the surface level winds from SIE area ESE following a heading of aprx 125 deg. CFs were high for the majority of the flight, breaking up as we got closer to ATLIC. CTHs were variable along the flight, up to approx 9000' near the eastern end of the legs. 5 sonde drops along the downwind leg with an additional 2 on the return track.

7 sondes

ZIZZI

1/2 ZIZZI/AGUNE

AGUNE

1/2 AGUNE/END
END
ZIBUT
ATLIC

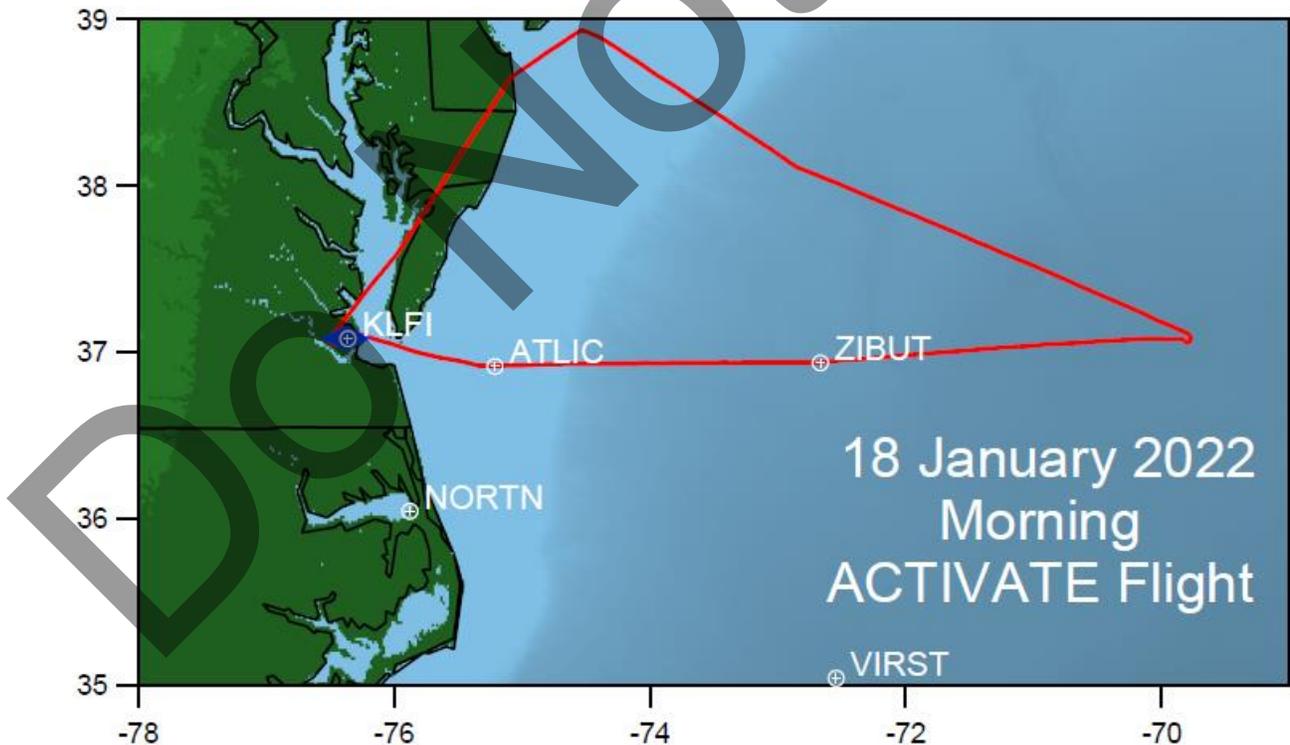
Falcon

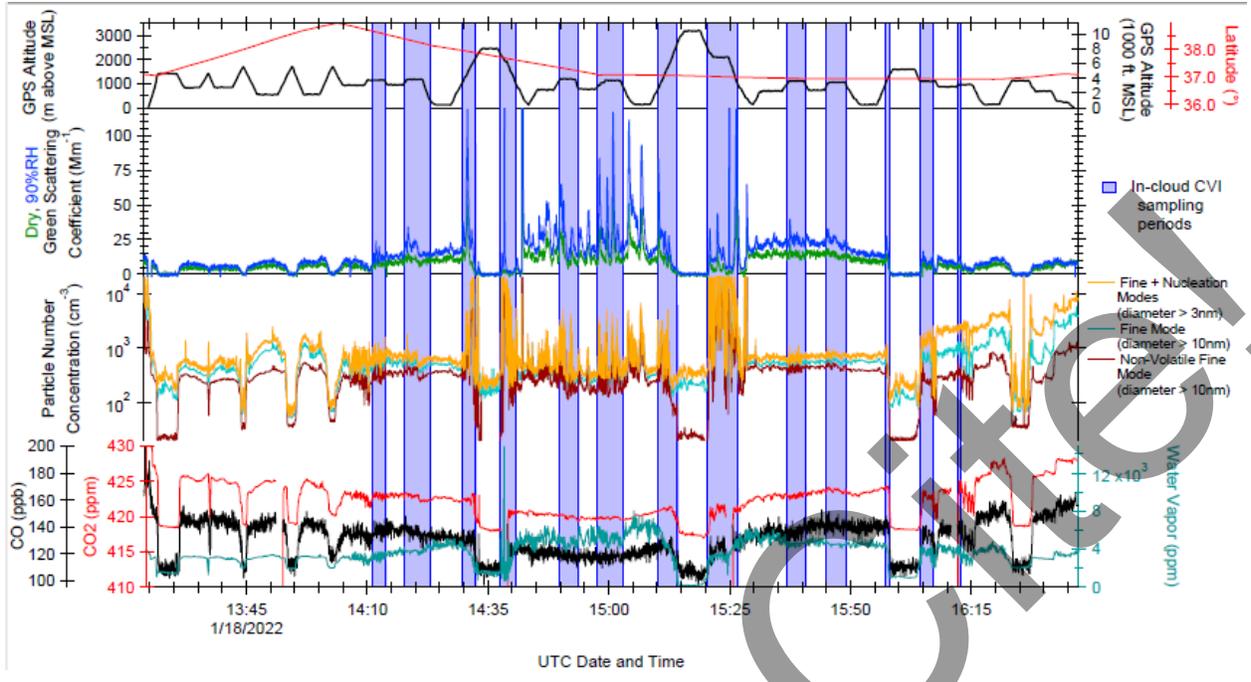
Pilot report (Slover):

Sortie flown as planned: KLFJ JAMIE RADDZ ZIZZI FISSH AGUNE 3706N06945W ZIBUT ATLIC KLFJ.
Great statistical survey flight. Clouds as high as 10,000' MSL. Some challenges getting 3-min at "below cloud tops" due to icing of probes. Last one at that altitude we were able to keep icing from forming by flying at 300 KIAS with higher total air temperature. After landing tire replacement needed but did not delay next sortie.

Flight scientist report (Crosbie):

Cold air outbreak conditions. Stat survey with coastal run followed by along wind leg from Delaware Bay to the SE. Return through ZIBUT westbound. Clear conditions over land with significant variation in the temperature profile during profiles. Cloud conditions started close to shore and were initially thin and scattered, but rapidly thickened and filled in.



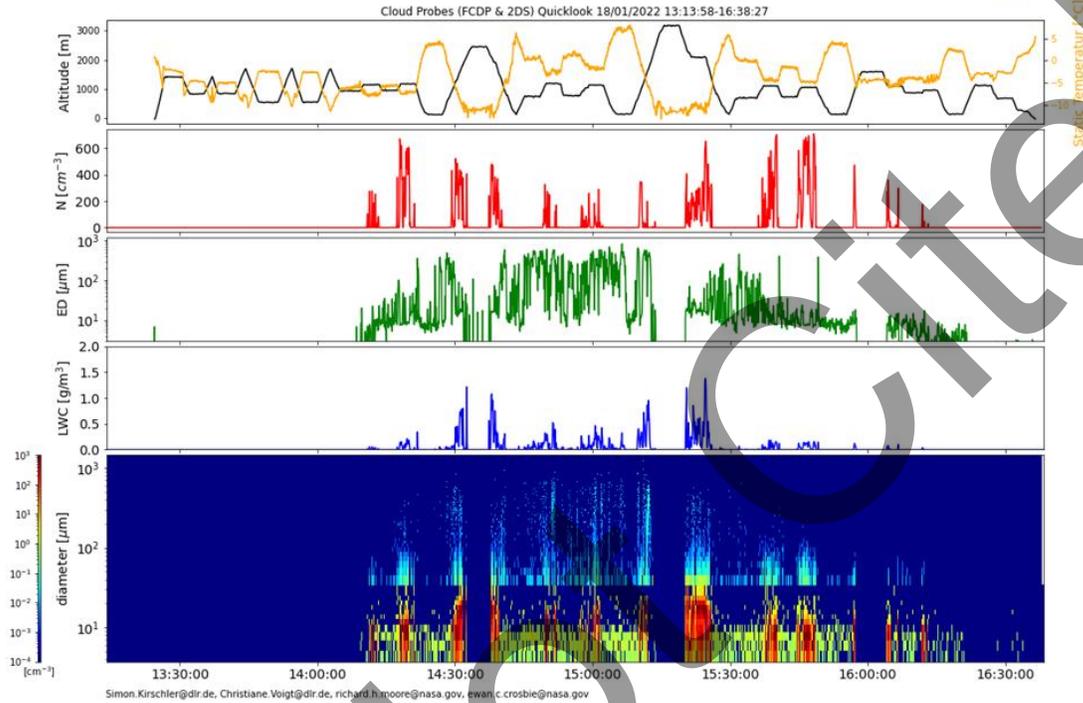


Do Not

Quicklook ACTIVATE Cloud Probes (FCDP & 2DS) Quicklook

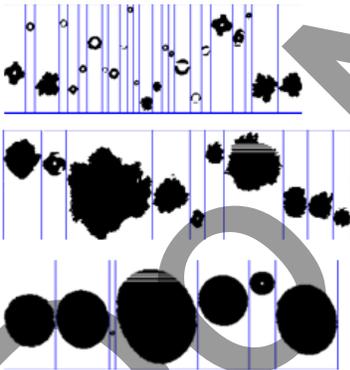
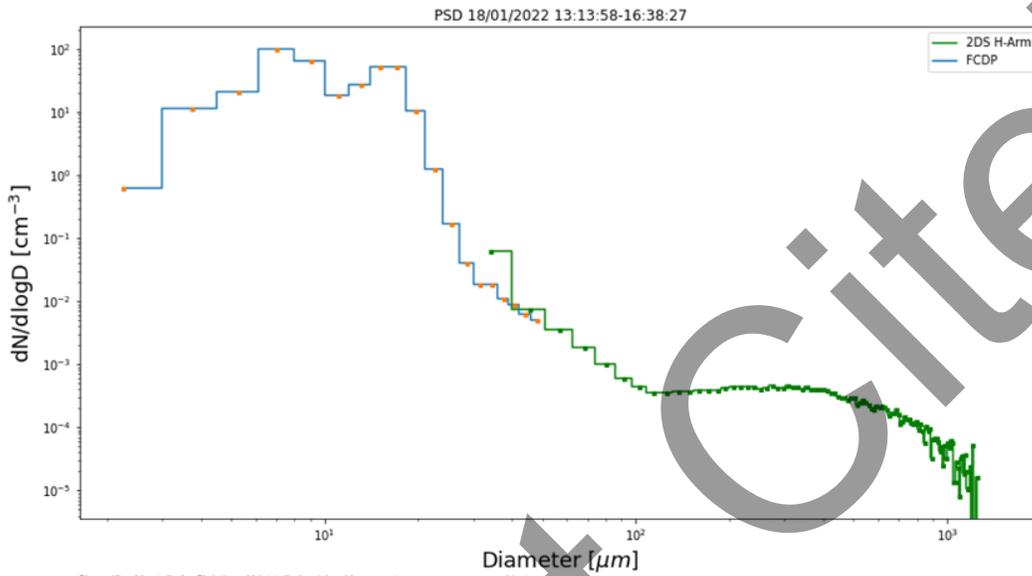
preliminary data, only for quicklook use

Simon Kirschler, Christiane Voigt, Richard Moore, Ewan Crosbie

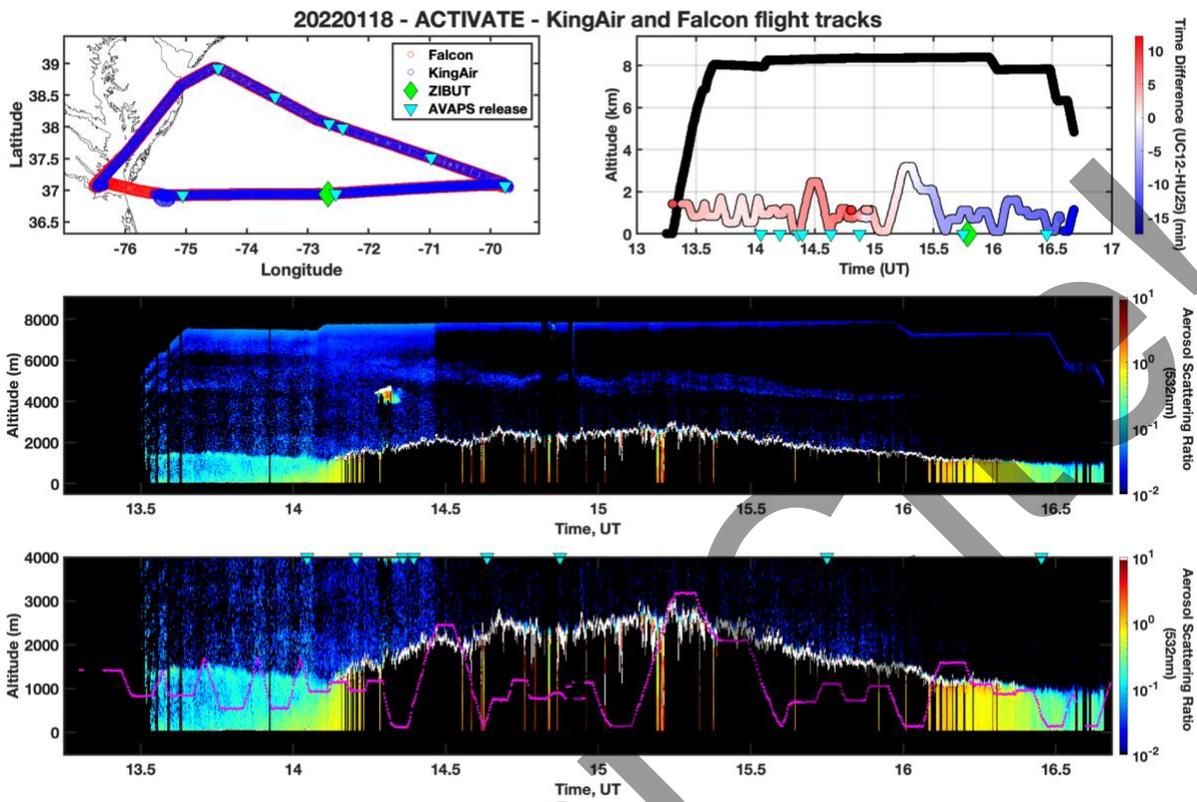


PSD ACTIVATE

preliminary data, only for quicklook use
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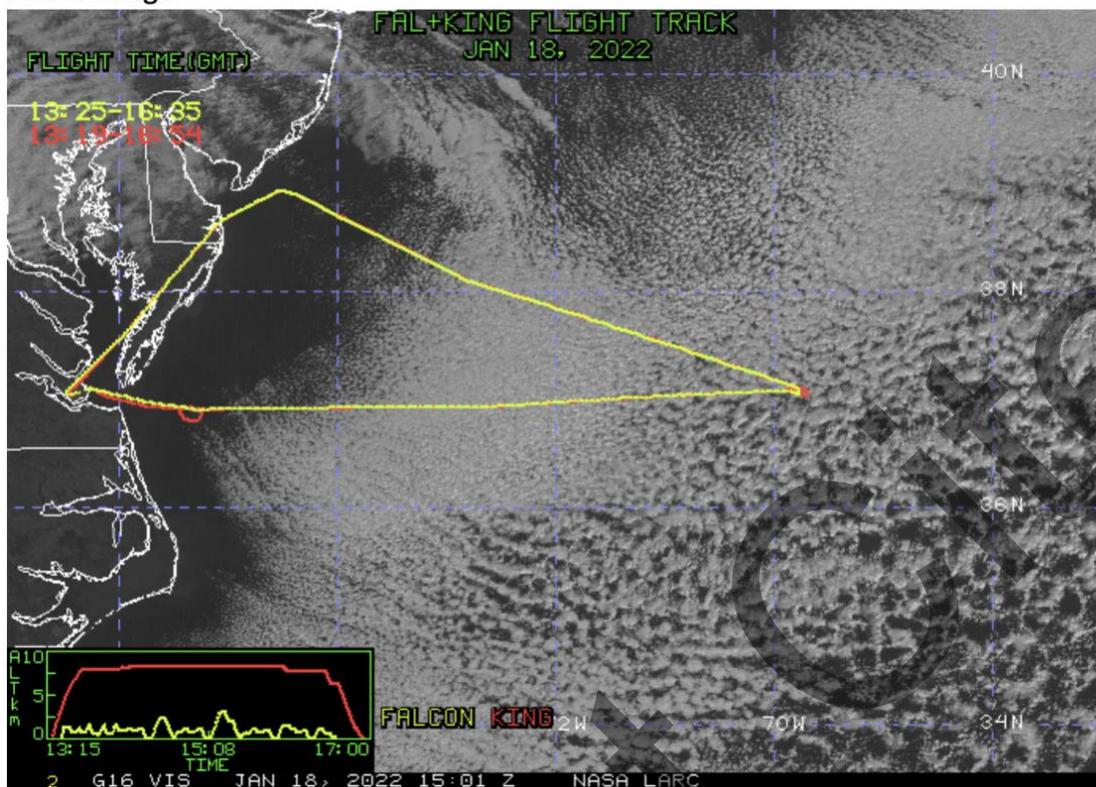


Mixed phase clouds with ice/liquid
Precip. Ice precip dominantly graupel.

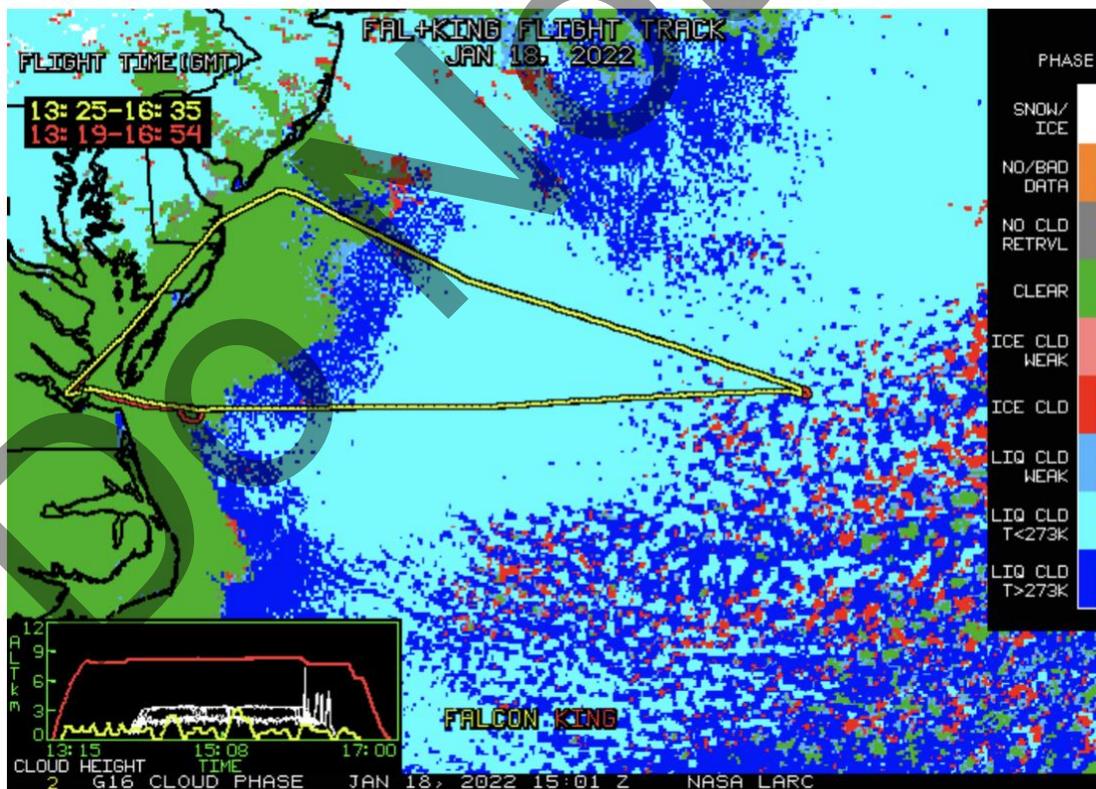


NASA-LaRC Clouds Group GOES-16 Quicklook Images for Flight 105, 15:01 UTC Jan 18, 2022

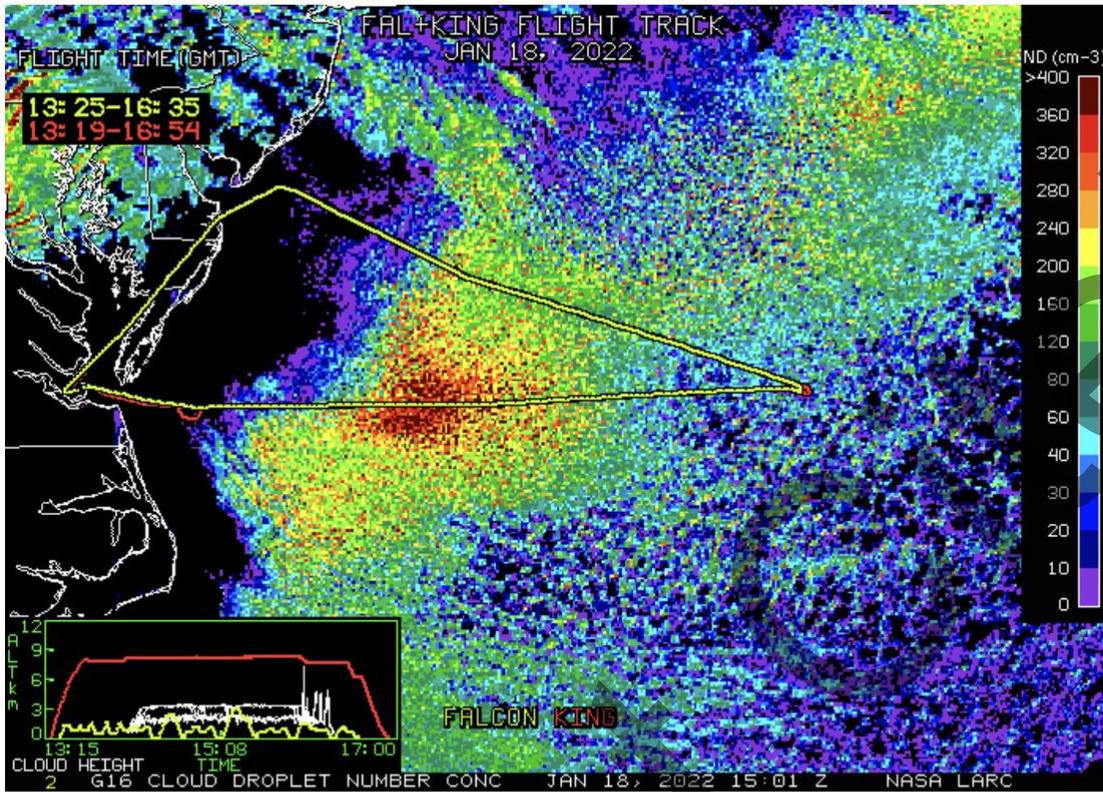
Visible Image



Cloud Phase



Cloud Droplet Number Concentration (cm-3)



Cloud-Top Height (Kft-ASL)

